To: West Valley Citizen Task Force
From: Bill Logue, Citizen Task Force Facilitator
Date: April 14, 2010
Subject: Summary of the March 24, 2010 Meeting

Next Meeting

The next Citizen Task Force Meeting will be:

Time & Date: 6:30 – 9:00 PM, April 28, 2010 [Note earlier start time]
Location: Ashford Office Complex
9030 Route 219
West Valley, NY

Note: Participants must be U.S. citizens and have photo identification. Please contact Bill Logue (860-521-9122, Bill@LogueGroup.com) with questions or comments concerning this summary or future meetings.

CTF Participants

CTF Members and Alternates attending: Deb Aumick, Chris Crawford, Rob Dallas, Chris Gerwitz, Steve Kowalski, Paul Kranz, Lee Lambert, Kathy McGoldrick, Anthony Memmo, Joe Patti, Warren Schmidt, Bill Snyder, Ray Vaughan.

Agency Participants and Observers

Department of Energy (DOE): Mark Bellis, Lisa Durham, Robert Johnson, Craig Rieman, Moira Maloney, Ben Underwood*.
New York State Energy Research and Development Authority (NYSERDA): Tom Attridge, Paul Bembia, Lee Gordon, John Kelly, Andrea Mellon, Dave Munro*, Paul Piciulo.
West Valley Environmental Services, LLC (WVES): John Chamberlain.
Nuclear Regulatory Commission (NRC) by video conference: Cynthia Barr, Tyson Campbell, John Clements, Chad Glenn, T.R. Rowe, Rebecca Tadesse.
Observers: Erich Evered, Joanne Hameister, Jerome Richardson, Robert Steiner, Barbara Warren*, Zintars Zadins.
*Participated by telephone.

Introductions and Announcements

Bill Logue welcomed the group and reviewed the meeting documents.[1] With the resignation of Congressman Massa, Warren Schmidt will continue to serve as the representative of the 29th New York Congressional District. When the Congressional seat is filled, either through a special or general election, the newly elected Congressman will make a determination as to a CTF representative. Bill Logue noted a correction for the meeting summary for March. In the radiation safety presentation the predicted site-wide dose in 2010 is 87 Rem *not* 0.87 as noted in the summary distributed by mail and email. The summary will be corrected and posted online not mailed out again.

Please note that the presentations summarized here are very technical. Many of the specialized terms used can be found in the glossary on the Citizen Task Force at http://www.westvalleyctf.org/glossary.htm.

[1] The documents are listed at the end of this summary and may be found at www.westvalleyctf.org

Status of Record of Decision and SEQRA Findings Statement

Craig Rieman informed the CTF that the Record of Decision (ROD) was under review at DOE headquarters and he anticipated publication in the coming weeks. Paul Bembia indicated that the NYSERDA Board of Directors would vote on the SEQRA Findings Statement at their April12 meeting. The Governor then has 15 days to act on it; therefore, Mr. Bembia anticipates issuance of the statement in early May.

DOE Information on Discovery of Asbestos in Areas of MPPB

Craig Rieman reminded the CTF that WVES has been conducting work in areas of the Main Process Plant Building (MPPB) to remove asbestos, piping, ventilation and other features as part of the "cold and dark" work in anticipation of dismantling and demolition. On February 24th, as work finished in the Process Chemical Room, sampling was performed to ensure the air quality met the asbestos clearance limits. Samples were collected with three air samplers within the work area and three outside the work area. The samples inside the work area met acceptable clearance standards but the samples outside the area indicated amounts above clearance levels. Work was halted, access to certain areas of the MPPB was restricted, the Department of Labor was notified, and a plan developed and implemented. He noted that the sampling mechanisms use high flow rates and therefore collect large volumes of air is collected, which is not used to determine a personal exposure. The area has been cleaned and re-sampled and met the acceptable asbestos clearance limits. Subsequently, on March 10, the Department of Labor visited the site and inspected the ongoing asbestos removal activities in the MPPB and noted no issues or concerns. Sampling for airborne asbestos in the MPPB will continue. He noted that none of the personal air monitors worn by workers detected unacceptable levels of asbestos exposure.

NRC Technical Evaluation Report – Summary of Review of Phase 1 DP

NRC staff presented an overview by video conference of the NRC Technical Evaluation Report (TER) of the Phase 1 Decommissioning Plan (DP) for the WVDP. Rebecca Tadesse introduced the NRC staff and turned the presentation over to Chad Glenn.

Mr. Glenn noted the boundaries of the Western New York Nuclear Service Center (WNYNSC), WVDP and State-Licensed Disposal Area (SDA). He noted that WVDP is a complex site requiring a unique approach under the West Valley Demonstration Project Act (the Act). He noted the decommissioning requirements under the Act under which NRC prescribed its License Termination Rule (LTR) as the decommissioning criteria on February 1, 2002. The DP and Environmental Impact Statement (EIS) will be evaluated based on the LTR criteria. DOE is obligated to submit the DP for review and comment and NRC is obligated to provide comments and specify with precision any objections to the DP. However, Mr. Glenn said that NRC does not have approval authority over the DP because DOE is not an NRC licensee. A CTF member requested clarification of the statement about lack of approval authority and asked whether NRC would specify with precision if its decommissioning requirements were ultimately not met. Mr. Glenn said yes, NRC would do so.

Mr. Glenn noted that the review is tied to the current preferred alternative in the final EIS and does not consider the SDA or the final decommissioning of the WNYNSC. The DP does describe how cleanup

criteria are met for the phase 1 of the preferred alternative. If a different preferred alternative is selected in the ROD, the DP would need to be revised and resubmitted. He reminded the CTF that Phase 1 addresses removal of the MPPB, Vitrification Facility and 01-14 Building, source area of North Plateau Groundwater Plume (NPGP) and lagoons. It does not specify decommissioning or long-term management decisions for Waste Tank Farm and support facilities, Construction Demolition and Debris Landfill, non-source area of the NPGP, NRC-licensed Disposal Area (NDA) or State-Licensed Disposal (SDA). In Phase 1 additional characterization and studies would be conducted to possibly reduce technical uncertainties related to the decision on final decommissioning and long-term management of the balance of WNYNSC. In Phase 2 final decisionmaking will be completed for decommissioning or long-term management. The DP also assumes that DOE will continue with storage of high-level waste (HLW) until it can be shipped to a repository.

A CTF member requested clarification of the statement that additional characterization and studies would be conducted during Phase 1 to "possibly" reduce technical uncertainties. The member expressed his understanding that important technical uncertainties needed to be reduced to provide a reliable basis for Phase 2 decisionmaking; there should be no hedging or qualification about "possibly" doing so. Cynthia Barr, replying on behalf of NRC, said that NRC recognized the need to do so.

Mr. Glenn described the sequence of the DP review process. In May of 2008 NRC and DOE outlined the approach in an initial public meeting where both scope and content were addressed. The dose modeling approach was further refined by the agencies in public meetings in July and October of 2008 and the DP was submitted to NRC by in December of 2008. A first revised DP was submitted in March 2009 and NRC issued its request for additional information (RAI) in May 2009. DOE filed responses to the RAI in August, September and November of 2009 and a second revision to the DP in December 2009. In February 2010 NRC issued its technical evaluation report (TER). The purpose of the DP review is to determine whether the proposed action in the DP satisfies decommissioning criteria and to identify objections to any provision of the plan. The NRC review focused on relevant information to support review objectives and the TER documents the agency's comments on the DP. During the process seven publicly noticed meetings were held and NRC received more than 100 written comments which informed staff review. Many of the comments were incorporated into NRC's RAI.

As part of the scoping meeting the phase 1 DP sections were agreed upon. These include: introduction, facility operating history, facility description, radiological status of facility, dose analysis, As Low As Reasonably Achievable (ALARA), planned decommissioning activities, quality assurance, and facility radiation surveys. NRC addressed both qualitative review areas and technical review areas. Qualitative review areas include: introduction, facility description and operating history, radiological status, planned decommissioning activities, and quality assurance. For these NRC concluded that sufficient information had been provided. The technical review areas addressed the dose modeling for Derived Concentration Guideline Level (DCGL) development, engineered barrier design, ALARA, and radiological surveys.

Cynthia Barr reviewed the conclusions in the TER.

Dose modeling conclusion. With respect to dose modeling, NRC concluded, with minor exceptions, that DOE had provided adequate information on the source term and had appropriately selected the critical group for dose modeling and analyzed a range of exposure scenarios. NRC further concluded that the mathematical methods and parameters are appropriate for the scenarios evaluated and the parameter uncertainty had been adequately addressed (with some comments noted in the TER). NRC concluded that the dose to the average member of the critical group will be less than the unrestricted use criteria. In reviewing the DCGLs, NRC determined that the appropriate parameter selection had been made and the results using deterministic methods tended to over predict risk and for probabilistic risk assessment the parameter distributions were reasonable. The critical group was originally defined as the resident farmer scenario because this was most limiting due to the number of potential pathways for exposure including water, plant and animal products, soil, and air. In some potential situations other scenarios were more limiting. They originally looked at initiation events such as a 30 foot below grade cistern with contaminated drill cuttings being brought to the surface. NRC also asked DOE to look at other initiating events such as erosion and erosion transport to off-site locations and transport contamination from the Lavery Till back into the overlying aquifer. In total, 7 to 8 additional scenarios for the DCGL were analyzed.

Engineered barriers conclusion. NRC concluded that the proposed engineered barriers in phase 1 are reasonable and appropriate; however, detailed design information was not reviewed at this stage but will be reviewed when the barrier designs become available. A CTF member asked what assumptions could be made about the life and potential failure of engineered barriers. Ms. Barr noted that the proposed barriers mainly address phase 1 activities (excavation for remediation). Therefore, the potential risk of re-contamination with backfill or if the barriers fail is a risk DOE will assume resulting in having to re-clean areas of the site. At this stage it should have no impact on the DCGL because DOE is not relying on these particular barriers to meet final criteria. If the phase 2 decision selected is sitewide close in place and DOE relies on these barriers, then NRC would look at their performance over time.

ALARA conclusion. NRC has reasonable assurance that the ALARA criteria in 10 CFR 20.1402 will be met.

Facility radiation surveys conclusion. DOE provided conceptual information on the radiological surveys to be conducted and NRC concluded that characterization is needed to develop the final status survey plan (FSSP). NRC is currently reviewing the FSSP and Characterization Sampling and Analysis Plan (CSAP).

During decommissioning a number of ongoing open items will be addressed, including:

- Compliance with LTR for the entire site will need to be re-evaluated following completion of Phase 2 decommissioning activities
- Modeling assumptions will need to be verified during characterization or in-process surveys
- Engineered barrier designs will need to be reviewed once they are developed by DOE
- Radiologic survey plans need to be reviewed
- NRC will provide input to Phase 1 assessment studies

Overall NRC staff determined that the Phase 1 DP provides reasonable assurance that the proposed action will meet the decommissioning criteria and no objections were identified.

Phase 1 Characterization Sampling and Analysis Plan

Robert Johnson, Mark Bellis and Lisa Durham from the DOE Argonne National Laboratory attended the meeting and Dr. Johnson presented an overview of the CSAP. At the outset Dr. Johnson noted that the plan as presented is based on the Preferred Alternative in the FEIS and if the Preferred Alternative changes in the ROD, the CSAP will be revised to reflect the changes. The full CSAP, a 500 page/46 megabyte document, is available for download from the WVDP website. (See Phase 1Decommissioning Plan and Related Documents section of http://www.wv.doe.gov/)

Dr. Johnson described the relationship among the EIS, Phase 1 DP, CSAP and FSSP. He noted that the EIS analyzes the environmental impacts of the alternatives, identifies a preferred alternative and results in a ROD. The DP specifies decommissioning activities consistent with the preferred alternative. The CSAP and FSSP are supporting documents which provide additional detail to implement the DP. As noted above the CSAP and FSSP are being reviewed by NRC.

The DP defines the foundation for CSAP activities by defining the portions of the WVDP within the Phase 1 scope, identifies the radionuclides of interest, develops cleanup guidelines for soils (surface and subsurface greater than 1 meter) to meet unrestricted release criteria and describes activities to meet Phase 1 DP objectives (e.g., Main Plant Process Building removal and Waste Management Areas (WMA) 1 and 2 subsurface soil excavation). A goal of the CSAP is to obtain more detailed information about the contamination status at the WVDP. This includes where contamination is present in: surface soil which is above Phase 1 DP goal levels, in subsurface soils, in drainage features and stream sediments, its lateral and vertical extent in WMA 1 (primarily around the MPPB) and 2 (primarily the lagoons), and to determine the kinds of contamination streams that can be expected from Phase 1 activities. In response to a question Dr. Johnson noted that all WMAs will be addressed in the CSAP; however, for some it will be a much more intensive data collection and analysis.

The CSAP is intended to inform Phase 1 DP activities. In response to a question, Dr. Johnson said that the CSAP will also support Phase 2 decisionmaking. Its relationship to Phase 2 decisionmaking, and the question of whether the scope of data collection for Phase 2 decisionmaking is being prematurely narrowed by the CSAP, were discussed briefly but could not be fully explored in the time available.

Dr. Johnson described four main categories for data collection in the CSAP. These are: pre-design to support appropriate Phase 1 DP designs, remedial action support to guide Phase 1 DP activities while underway, post-remediation to document contamination status for those areas not undergoing Phase 1 FSSP data collection, and to inform Phase 2 decision-making. Within each of these categories goals have been defined; examples include to evaluate the list of radionuclides in each WMA, to establish background data for the radionuclides, and to determine the extent of surface contamination above DCGL. The focus is primarily on soil contamination with a lesser focus on groundwater and sediment but not surface waters.

For each WMA a phased approach will use such that in areas where contamination is found additional and more extensive characterization and analysis will be performed. Paul Bembia noted that the on-going assessment studies may also indicate areas needing more detailed sampling and characterization.

Dr. Johnson noted that the CSAP is tightly integrated with the FSSP, but he also noted that the FSSP is more exclusively focused on Phase 1. The FSSP describes the data that must be collected to demonstrate an area meets the Phase 1 DP requirements. The FSSP applies to the deep excavations as part of the WMA 1 and 2 work and also potentially to surface soils outside those areas. Both have are very prescriptive concerning sampling and analysis of soils and the CSAP is written so that collected data can be used for FSSP purposes. In response to a question concerning the impacts of erosion and how well the erosion processes are understood, Dr. Johnson noted that the FSSP sampling will address where contamination exists horizontally and vertically and assures that the DCGL will be met. Zintars Zadins of SAIC noted that NRC had addressed this in the RAIs concerning surface erosion and accepting the resident farmer scenario as most restrictive for dose modeling purposes. The DP identifies 18 radionuclides of interest and an additional 12 of possible interest. The DCGLs for the 18 have been defined. Historical information indicates that Strontium-90 and Cesium-137 are the most likely and frequent contaminants to require remediation. The locations for background sampling are yet to be determined.

Ten of the 12 WMAs form the basis for organizing pre-design data collection. There are common data collection activities for all areas including: historical aerial photograph analysis, site-wide gamma walkover survey, site-wide buried infrastructure inventory, surface soil sampling where potential concerns have been identified, subsurface soil sampling where potential concerns have been identified, and drainage feature/stream sediment sampling. The aerial analysis helps understand where activities occurred over time and to locate features which may have changed. Dr. Johnson demonstrated this with a series of photographs. This information is supplemented by work records and other documents.

The entire site will receive a gamma walkover survey which is an inexpensive process and yields data about gamma radiation emitters up to six inches below the surface using a sensor and backpack mounted location mapping device yielding four measurements per square meter. The CTF and Dr. Johnson engaged in a discussion concerning the limits of gamma surveys because other radionuclides might not be detected and whether there is a correlation in the locations of gamma emitters with other radionuclides of interest or possible interest. Dr. Johnson noted that, where contamination is found, more intrusive soil sampling will be performed. A Field Instrument for the Detection of Low Energy Radiation “FIDLER” sampler/detector will be used. It is considered more sensitive than a sodium iodide sampler/detector to detect low energy gamma emitting radionuclides. If an area is found that produces no positive results for contamination and there are no records indicating there are likely to be any, DOE will identify that area as appropriate for Final Status Survey which requires more intensive sampling likely to detect contamination not found by the gamma walkover. The risk for DOE is that if this estimate is wrong and contamination is found that area will have to be cleaned.

A CTF member asked whether it would make sense to perform in situ gamma spectroscopy in addition to a gamma walkover survey. In response, Dr. Johnson stated that if the site had a different mix of

radionuclides, in situ gamma spectroscopy would make sense, but since soil samples will have to be collected and analyzed for radionuclides peculiar to WVDP that would be invisible to both a gamma walkover survey and in situ gamma spectroscopy (e.g., Sr-90), in situ gamma spectroscopy did not provide significant benefits.

The discussion between the CTF and Dr. Johnson on the limits of gamma surveys was not fully resolved in at least two respects. First is the idea that a gamma survey is an efficient way to locate gamma-emitting radionuclides, the question being the extent to which gamma-emitting and non-gamma-emitting radionuclides will be co-located. This question is accentuated at a reprocessing site whose main business was the chemical separation of radionuclides, but it also arises at any site where radionuclides migrate through clay soils and are differentially adsorbed – and thus separated – as they migrate. The Final Status Survey sampling provides some assurance that non-gamma-emitting radionuclides will eventually be found even if not co-located with gamma emitters, but finding substantial quantities of non-gamma-emitting radionuclides at such a late stage of clean-up would not be an efficient use of resources. The second unresolved point involves the lost opportunity to determine the extent to which radionuclides at the site are co-located. The "FIDLER" detector is inferior to a sodium iodide detector in this respect because the "fiddler" counts only total gamma. In contrast, a sodium iodide detector counts total gamma but can also identify the radionuclide that emitted each gamma ray. Using sodium iodide detectors for the gamma walkover could thus provide a huge data set for assessing the extent to which the various gamma emitters are co-located with one another at the West Valley site – which, by inference, would provide very useful guidance on the extent to which gamma emitters and non-gamma-emitting radionuclides are co-located with each other. The lesser sensitivity of sodium iodide detectors, while not a trivial issue, can be at least partly overcome by reducing the walking speed of the technicians performing the gamma walkover.

Dr. Johnson continued saying that buried infrastructure will be inventoried and mapped because it is a potential hazard to site characterization activities and subsurface soil sampling (e.g., striking piping or conduit in sample borings.) and because they are potential sources of contamination from leaks, flow pathways for water/contamination and potential use of soil for backfill which might be contaminated. Surface and subsurface soil sampling will vary by WMA based on the function and history. Where possible, for areas where they are no obvious concerns, DOE may designate an area for final status survey data collection.

WMA 1 and 2 will have the greatest intensity of sampling to support future excavation. Pre-design sampling will address: Where is subsurface contamination present? What radionuclides can DOE expect to encounter? What will the contamination status of the excavation walls likely be? What type of soil waste streams will be generated and how much? When can excavation stop in the Lavery Till? and Did contamination migrate along the foundation piles into the Lavery Till beneath WMA 1? Dr. Johnson showed diagrams of soil core location in WMA 1 and the location of the MPPB piles. The group discussed potential contamination which could have spread along the building piles, perhaps into the Kent Recessional sequence. A member indicated that piles which were straightened during construction should be of particular concern as a pathway. The risks and benefits of visual inspection for rusting, core samples, and

directional drilling with casings were discussed. The surveys are likely to be performed in areas which are "hotspots".

CTF Discussion Concerning Objectives in the Ground Rules

The CTF deferred discussion of changes in the Ground Rule objectives pending release of the ROD. One member encouraged the group not to drop the NRC policy statement and EIS as objectives.

Observer Comments

Barbara Warren raised several questions about surface soil sampling for the NDA, the spatial distribution of surface contamination which might be revealed by the gamma walkover survey and groundwater movement. Dr. Johnson suggested the NRC would be better able to answer a number of the questions and stated that, with respect to the North Plateau, a significant amount of additional data has been collected recently to support the design and installation of the permeable treatment wall to contain the North Plateau Groundwater Plume, but that these data collection efforts were not part of the CSAP as that is an area that will be addressed in Phase 2.

Joanne Hameister of the Coalition on West Valley Nuclear Wastes indicated that after the ROD and Findings Statement are issued the Coalition will more fully explore holding Quarterly Public Meetings on the same evening as CTF meetings.

Action Items

There were no action items resulting from the meeting.

Documents Distributed

Document Description	Generated by; Date
Meeting Agenda	Logue; 3/24/10
NRC TER Presentation Parts 1 and 2	NRC; 3/24/10
DOE CSAP Presentation	DOE; 3/24/10
Newspaper clippings distributed at the meeting	NYSERDA; 3/24/10